



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,432	03/31/2000	Gad S. Sheaffer	2207/6849	3939

7590 03/03/2003

Kenyon & Kenyon
Suite 600
333 West San Carlos Street
San Jose, CA 95110-2711

EXAMINER

KIM, KENNETH S

ART UNIT	PAPER NUMBER
----------	--------------

2183

DATE MAILED: 03/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/540,432

Applicant(s)

SHEAFFER, GAD S.

Examiner

Kenneth S KIM

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

KENNETH S. KIM
PRIMARY EXAMINER

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. Claims 1-28 are presented for examination.
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Sheaffer et al, U.S. Patent No. 5,790,822, submitted by the applicant.

Sheaffer et al teaches the invention as claimed in claim 1 including a method for executing a set of instructions in a processor comprising :

(a) decoding the set of instructions (132; col. 1, line 63)

(b) steering each of the set of instructions into an instruction cache according to a particular one of a set of execution units that the instruction requires (col. 6, lines 9-18),
and

further teaches as in claims 2-6,

- (c) further comprising storing each of the set of instructions into a particular one of a set of bins in the instruction cache (col. 6, lines 10 and 17; each cache line implicitly comprises a collection bins each corresponding to the resource bins, particularly when the instructions are in fixed length bundles; col. 6, line 63) – claim 2,
- (d) renaming a set of registers prior to steering (133; col. 3, line 67) – claim 3,
- (e) further comprising scheduling if a particular one of the set of instruction is found in the instruction cache (col. 4, line 31) and executing using a particular one of the set of execution units (col. 4, line 33) – claims 4 and 5,
- (f) further comprising fetching from a memory device if the particular one of the set of instructions is not found in the instruction cache (114; col. 3, line 61) – claim 6.

The method claims 7-11, the method claims 12-18 (dispatching in col. 4, line 32 constituting the second steering claim 16), the processor claims 19-23 (using a cross-bar to steer), and the processor claims 24-28 (using second cross-bar to dispatch) are equivalently rejected based on the same reason.

4. Claims 1, 2, 7, 8, 12, 13, 19, 20, 24, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Branigin, U.S. Patent No. 5,471,593.

Branigin teaches the invention as claimed in claim 1 including a method for executing a set of instructions in a processor comprising :

- (a) decoding the set of instructions (fig. 5, decode and issue unit)
- (b) steering each of the set of instructions into an instruction cache according to a particular one of a set of execution units that the instruction requires (fig. 5, reservation stations), and

further teaches as in claim 2,

(c) further comprising storing each of the set of instructions into a particular one of a set of bins in the instruction cache (each bin of reservation stations for each functional unit) – claim 2,

The method claims 7 and 8, the method claims 12 and 13, the processor claims 19 and 20, and the processor claims 24 and 25 are equivalently rejected based on the same reason.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ginosar et al taught a cross-bar switch instruction steering unit.

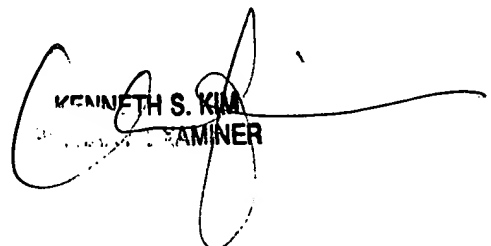
Samra et al taught a cache line comprising bins each corresponding to a cluster of execution units.

Lipasti taught a method of steering instructions to clusters of execution units.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth S KIM whose telephone number is (703) 305-9693. The examiner can normally be reached on M-F (8:30-17:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (703) 305-9712. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


KENNETH S. KIM
EXAMINER